

vicinity, causing great damage. The hail-stones were as large as walnuts and fell for nearly half an hour. The various crops and fruit were much injured, and hundreds of panes of glass were broken.

Easton, Pa.: during the evening (about 10 p. m.) of the 19th a destructive storm occurred in this vicinity. Trees were uprooted, and the heavy rainfall caused much injury to the roads and growing crops. Considerable damage was done by lightning.

Wilkesbarre, Pa.: a severe storm of rain and hail prevailed here during the afternoon of the 19th, causing considerable damage to crops in the surrounding country. In the northern part of Wilkesbarre a large frame building was destroyed.

Reading, Pa.: a severe storm passed over this section during the night of the 19-20th. The heavy rains caused the flooding of many cellars, and in the surrounding country the grain fields were levelled and fruit was severely cut by hail. The storm was accompanied by a very remarkable electrical display.

Booneville, Cooper Co., Mo.: the heaviest rain storm of the season occurred here at about 10 p. m. of the 20th, the rainfall amounting to over three inches. Growing corn in many parts of the county was blown down, and wheat was also damaged.

Cleveland, Ohio: the steam barge "P. H. Walters" was sunk off Black River, Ohio, during a severe squall on the evening of the 20th.

Raleigh, N. C.: during the prevalence of a severe thunder-storm on the 20th there was a fall of hail about four miles north of this place, causing considerable damage to the cotton and corn crops. The path of the hail belt was about one mile wide, within which the cotton was stripped of its leaves and corn badly torn.

Henderson, Vance Co., N. C.: during the night of the 20th-21st quite a severe storm passed through the "Bear Pond" section of this county; houses, fences, and trees were blown down.

Mr. L. J. Heatwole, voluntary observer at Dale Enterprise, Rockingham Co., Va., furnishes the following report of a storm which occurred at that place:

At 4.30 p. m. on the 20th a dark, ominous looking cloud was seen forming high up in the western sky, and was accompanied by a loud roaring noise, which resembled that made by an approaching railroad train. It apparently remained stationary for about forty minutes and then drifted slowly eastward, at which time began a tremendous downpour of rain and some hail. The bulk of the storm passed just to the south of this point, and to all appearances the wind came in a direction downward and outward from the sides of the cloud, with a force so great as to destroy much fencing and timber, and also to overturn wind-engine towers and buildings along its track. At this station the wind blew a heavy gale from the south and southeast, while two miles to the south, on the opposite side of storm, the current was so violent from the north and west as to completely demolish a large barn. The lightning was sharp and

frequent; in one instance a barn eight hundred yards or more from the station received a heavy discharge of lightning that killed two horses in the stables.

New Orleans, La.: on the 20th thunder-storms prevailed from 2.20 to 6.15 p. m., and from 8.10 to 9 p. m. The rainfall, amounting to 5.00 inches, which accompanied this storm flooded a large part of the city and caused much damage. The rainfall was the heaviest that has occurred since April 7, 1883.

Lenoir, Caldwell Co., N. C.: a destructive hail storm occurred in this vicinity on the 21st; the hail-stones were as large as hens' eggs and caused great damage to crops.

Rock Hall, Kent Co., Md.: a storm of unusual severity, accompanied by hail, occurred in this vicinity during the night of the 21st-22d, causing much damage to orchards, crops, and other property.

Petersburg, Dinwiddie Co., Va.: a storm, reported to have been the most severe experienced for many years, passed through Amelia and Nottoway counties on the 22d. Dwellings were unroofed, and out-buildings, fences, and trees were blown down. In Dinwiddie county crops were severely injured by a heavy fall of hail.

Salisbury, Wicomico Co., Md.: a violent storm occurred in this vicinity at about 9 p. m. on the 22d. Much damage was done by the very heavy rainfall and high wind.

Wilmington, Del., 22d: two storms of unusual violence occurred here during the early morning of the 22d, the more violent coming from the southwest. Many trees, chimneys, and light structures were blown down, and several buildings were unroofed. Great damage was done to telegraph and telephone wires.

Philadelphia, Pa.: thunder-storms occurred during the early morning and afternoon of the 22d and continued during the night of the 22d-23d. Rain fell at intervals during this time, but at 7.45 p. m. a steady downpour set in and continued during the night, the rainfall amounting to 3.63 inches, which is remarkably heavy for this station.

Valentine, Nebr.: on the 26th a thunder-storm began at 6.45 p. m. and continued until 8.45 p. m.; hail fell for five minutes, beginning at 7 p. m. The wind attained a very high velocity; for two and one-half minutes it blew at the rate of one hundred and fifty miles per hour. The roofs were blown from several buildings and a number of frame structures were blown down.

WATER-SPOUTS.

Captain Frank, of the s. s. "Taormina," reports having observed two water-spouts on June 21st, in N. 41° 20', W. 61° 28', at noon.

First Officer James Ryley, of the s. s. "Lampasas," Captain Crowell, commanding, reports having observed three water-spouts June 26th, in N. 33° 00', W. 77° 50', at noon.

COTTON REGION REPORTS.

In the following table are given the means of the maximum and minimum temperatures, and the average rainfall for the cotton-belt districts during the month. For the purpose of comparison the means for the five preceding years are also given.

Generally the rainfall is deficient in all districts, the departures ranging from 0.58 inch in the district of Vicksburg to 3.13 inches in the district of Charleston, while they exceed two inches in the districts of Atlanta, Little Rock, Memphis, Montgomery, and Savannah; in the district of Galveston a small excess occurs.

The mean maximum temperatures are above the average in all districts, except in the districts of Galveston and Little Rock, which show slight departures below the average. The mean minimum temperatures are slightly below the average in all districts, except for the district of Galveston, where a small excess occurs.

A comparison of the means of the maximum and minimum temperatures shows that the absolute range of temperature during June, 1887, in the southern sections of the country was greater than the average of previous years.

Temperature and rainfall data for the cotton districts, June.

Districts.	Rainfall.			Temperature.								Extremes for June, 1887.	
	Average for June of five preceding years.	Average for June, 1887.	Departures.	Maximum.			Minimum.						
				Mean for June of five pre- ceding years.	Mean for June, 1887.	Departures.	Mean for June of five pre- ceding years.	Mean for June, 1887.	Departures.				
	Inch.	Inch.	Inch.	°	°		°	°		°	°	°	°
New Orleans.....	5.90	5.27	-0.63	90.5	91.0	+0.5	70.5	68.6	-1.9	101	57		
Savannah.....	6.28	3.91	-2.37	89.7	90.6	+0.9	69.6	68.2	-1.4	104	48		
Charleston.....	6.54	3.41	-3.13	88.3	90.2	+1.9	67.4	66.0	-1.4	105	44		
Atlanta.....	5.61	3.56	-2.05	87.0	89.1	+2.1	66.0	65.2	-0.8	104	42		
Wilmington.....	5.59	3.98	-1.61	87.2	88.4	+1.2	65.2	64.4	-0.8	109	42		
Memphis.....	4.90	2.54	-2.36	87.4	88.9	+1.5	66.5	63.7	-2.8	102	44		
Galveston.....	2.58*	3.27	+0.69	92.1*	91.4	-0.7	70.2*	70.3	+0.1	103	58		
Vicksburg.....	4.19	3.61	-0.58	89.9	91.3	+1.4	69.2	69.0	-0.2	101	52		
Montgomery.....	5.25	2.84	-2.41	89.2	90.2	+1.0	67.5	66.9	-0.6	104	47		
Augusta.....	5.61	3.85	-1.76	88.6	91.0	+2.4	66.9	66.4	-0.5	105	48		
Little Rock.....	3.37	1.26	-2.11	89.1	88.6	-0.5	65.9	64.9	-1.0	100	43		
Mobile.....	4.78	3.79	-0.99	91.0	91.6	+0.6	69.7	65.4	-4.3	105	46		

*Average for June of four preceding years.